

MAMYKIN, P.S.; KAYBICHEVA, M.N.

Manufacture and performance of crucibles of induction furnaces
made of magnesite with sintering additives. Ogneupory 25
no.7:308-312 '60. (MIRA 13:8)

1. Vostochnyy institut ogneuporov.
(Crucibles)

MAMYKIN, P.S., doktor tekhn.nauk (Sverdlovsk)

Spodumene and its effect on material having a high alumina content.
Sbor. nauch. trud. Bel. politekh. inst. no.86:106-110 '60.

(MIRA 13:10)

(Ceramics)

S/131/62/000/006/001/001
B117/B104

AUTHORS: Mamykin, P. S., Zlatkin, S. G.

TITLE: Crucibles made of calcium oxide

PERIODICAL: Ogneupory, no. 8, 1962, 376 - 380

TEXT: This is a description of the method of manufacturing calcium oxide crucibles by pouring from alcoholic suspensions into ceramic molds, patented by the Gosudarstvennyy komitet po delam izobreteniy i otkrytiy pri Sovete Ministrov SSSR (State Committee for Inventions and Discoveries at the Council of Ministers USSR) under no. 134399 on March 22, 1961. When manufacturing laboratory crucibles in accordance with ГОСТ 4660-49 (GOST 4660-49) for corundum crucibles, optimum conditions of this process were established: CaO containing 1.5 % TiO_2 is obtained as a powder or in the form of pressed briquets ($\approx 15 \text{ kg/cm}^2$) by calcining at $1500 - 1550^\circ\text{C}$. From it, slip containing 30 - 35 % by weight of ethyl or butyl alcohol is prepared and poured into ceramic molds. To facilitate the removal of the crucibles, the inner walls of the molds are coated with a thin graphite layer, resulting in a 90 - 95 % yield of undamaged products. The cruci-
Card 1/2

Crucibles made of calcium oxide

S/131/62/000/008/001/001
B117/B104

bles are fired twice: first in any type of furnace at 1100°C (hourly temperature increase 250 - 300°C) and then for 1 hr in a cryptol furnace at 1650°C. Products made from pure CaO containing 1.5 % TiO₂ may be stored without paraffin coating for about six months in an exsiccator. There are 3 tables.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S. M. Kirova
(Ural Polytechnic Institute imeni S. M. Kirov)

Card 2/2

STRELOV, K.K.; MAMYKIN, P.S.; Prinimali uchastiye: BAS'YAS, I.P.;
 BICHURINA, A.A.; BRON, V.A.; VECHER, N.A.; VOROB'YEVA, K.V.;
 D'YACHKOVA, Z.S.; D'YACHKOV, P.N.; DVORKIND, M.M.;
 IGNATOVA, T.S.; KAYBICHEVA, M.N.; KELAREV, N.V.;
 KOSOLAPOV, Ye.F.; MAR'YEVICH, N.I.; MIKHAILOV, Yu.F.;
 SEMKINA, N.V.; STARTSEV, D.L.; SYREYSHCHIKOV, Yu.Ye.;
 TARNOVSKIY, G.I.; FLYAGIN, V.G.; FREYDENBERG, A.S.;
 KHOROSHAVIN, L.B.; CHUBUKOV, M.F.; SHVARTSMAN, I.Sh.;
 SHCHETNIKOVA, I.L.

Institutes and enterprises. Ogneupory 27 no.11:499-501
 '62. (MIRA 15:11)

1. Vostochnyy institut ogneuporov (for Strellov). 2. Ural'skiy
 politekhnicheskii institut im. S.M. Kirova (for Mamykin).
 (Refractory materials--Research)

MAMYKIN, P.S., prof., doktor tekhn. nauk; ZLATKIN, S.G., inzh.

Research in obtaining refractory materials based on wastes
from potassium bichromate production. Trudy Ural. politekh.
inst. no.117:5-7 '62. (MIRA 16:6)

(Refractory materials)

~~MAMYKIN~~ P.S., doktor tekhn. nauk, prof.; STARTSEV, D.A., assistant;
D'YACHKOV, P.N., inzh.

Refractory bushings for continuous casting of non-ferrous
metals. Trudy Ural. politekh. inst. no.117:8-14 '62.
(MIRA 16:6)

(Refractory materials)

(Continuous casting—Equipment and supplies)

MAMYKIN, Petr Sergeyevich, doktor tekhn. nauk; LEVCHENKO, Petr
Vasil'yevich, kand. tekhn. nauk; STRELOV, Konstantin
Konstantinovich, kand. tekhn. nauk; MITKALINNYI, V.I.,
retsenzent; MIKHAL'SKIY, A.A., retsenzent; BELOV, O.V.,
red.; SYRCHINA, M.M., red. izd-va; MAL'KOVA, N.T., tekhn.
red.

[Kilns and driers of refractory plants] Pechi i sushila ogne-
upornykh zavodov. [By] P.S. Mamykin i dr. Sverdlovsk, Metallurg-
izdat, 1963. 471 p. (MIRA 16:2)
(Refractories industry—Equipment and supplies) (Kilns)

ACCESSION NR: AR4027925

S/0137/64/000/002/B007/B007

SOURCE: RZh. Metallurgiya, Abs. 2B39

AUTHOR: Mamy*kin, P. S.; D'yachkov, P. N.; Proskurin, Yu. A.; Olyunin, L. Ya.

TITLE: Highly refractory crucibles from fused magnesite for melting special metals in high-frequency furnaces

CITED SOURCE: Tr. Vost. in-ta ognеuporov, vy*p. 4, 1963, 127-130

TOPIC TAGS: magnesite, crucible, refractory

TRANSLATION: Rammed crucibles made of fused magnesite of the following composition (in %): SiO_2 , 3.7; Al_2O_3 , 1.1; Fe_2O_3 , 1.94; CaO , 1.6; MgO , 91.6 and a dextrin solution (300 g per liter of water) have a maximum life of 200 meltings, and an average life of 150. A description is given for the process of manufacturing crucibles for melting high-temperature alloys without slag, and also for melting in initial vacuum. N. Molchanov

DATE ACQ: 19Mar64

SUB CODE: ML

ENCL: 00

Card 1/1

MAMYKIN, P.S.

About I.S. Kainarskii and E.V. Degtiarev's book "Carborundum
refractories." Reviewed by P.S. Mamykin. Ogenupory 28
no.11:528, 3 of cover '63. (MIRA 16:12)

MAMYKIN, P.S.; ANTONOV, G.N.; KASHCHEYEV, I.D.

New method of determining the slag resistance of refractory materials. Ogneupory 30 no.1:37-42 '65.

MIRA 18:3)

1. Ural'skiy politekhnicheskiy institut im. S.M.Kirova.

MURKIN, P.S.; URSKIN, P.S.

Slap resistance of red clay (mud). Ogneupory 3, no. 3136-42.
'65. (MIRA 19:5)

1. Ural'skiy i tekhnicheskii institut im. S.M.Kirova.

MAMYKIN, P.S.; USKUMBAYFV, N.U.; RAVDANIS, B.I.; YAKUSHEV, Ye.A.; PSHENBAYEV, R.G.;
~~SIMKIN~~, E.A.

Testing high-alumina refractories. TSvet.met. 38 no.3:35-36 Mr '65.
(MIRA 18:6)

MAMYKIN, S.N. (Kiyev, ul. Yanvorskaya, d.27, kv.170)

Diverticula of the ~~duodenum~~. Klin.khiz. no.12:37-41 D '62.
(MIRA 16:2)

1. Kafedra obshchey khirurgii II (zav. - zasluzhennyi deyatel' nauki, prof. I.I. Kal'chenko) Kiyevskogo instituta usovershenstvovaniya vrachei.

(DUODENUM—DIVERTICULA)

GEVORGYAN, B.A.; KATSMAN, Yu.V.; LIMONOV, G.Ye.; SAMKOV, V.S.; KATKOV,
V.P.; VINOGRADOVA, L.V.; ~~MAMYKINA, A.D.~~; POPOV, G.I.; DOROKHOV,
A.A.; FALEYEV, G.A., inzh., retsenzent, BOGATAYA, L.M., red.;
ZARSHCHIKOVA, L.N., tekhn. red.

[Press method for meat boning and deveining] Obvalka i zhilovka
miasa pressovaniem. [By] B.A.Gevorgian i dr. Moskva, Pishche-
promizdat, 1963. 31 p. (MIRA 16:8)

(Meat industry--Equipment and supplies) (Sausages)

ACC NR: AP5028610

(N)

SOURCE CODE: UR/0337/65/000/011/0036/0037

AUTHOR: Yegorov, V. D.; Mamykina, E. M.; Khromov, P. I.; Ravzina, F. S.

ORG: NIImetiz - MKZ

TITLE: Use of polymeric materials for steel cable coatings ¹⁵

SOURCE: Rybnoye khozyaystvo, no. 11, 1965, 36-37

TOPIC TAGS: protective coating, polycaprolactam resin, wire product, connecting cable / LK-O connecting cable, TK connecting cable ¹⁷

ABSTRACT: The results of testing steel cables with coatings made of capron ¹⁵ material (polycaprolactam resin and fiber) are presented. The best results were obtained with coating films of up to 0.7-mm thickness formed on steel cable cores of up to 6-mm at temperatures of 230, 240, 255 and 260 C. It is mentioned that parkerized core wires have the best adhesive properties (40 kg/sq cm) while vitrified wires have the lowest adhesion (12 kg/sq cm). The effects of various core temperatures (150 to 600 C) on the adhesive and mechanical properties of capron films were studied and a temperature of about 400 C is recommended for preheating of cores. The cables made of coated strands shows the best endurance (3.3 times greater). The test proved that a 0.5-mm film produced a 2 to 3 times increase in cable endurance. A further increase of the film thickness had little effect on the cable endurance. The steel cables with coated strands of LK-O ¹⁵ type (6 x 19 + 7 x 7; d = 25 mm) and of TK type (6 x 37 + 1 core; d = 15 mm) were prepared and successfully used on fishing ships. Their cross-sections are shown. Orig. art. has: 2 figures.

SUB CODE: 11, 13/ SUBM DATE: None

Card 1/1

NAMYENNA, Lyubov' Grigor' yevna

Anti-Bacterial Therapeutics of Toxicol Pneumonia of Children of Early
Ages

Dissertation for candidate of a Medical Science degree. Chair of Micro-biology
(head, Prof. S.I. Sherishorina) and Hospital Pediatrics (head, Asst. Prof.
V.S. Voronova) Saratov Medical Institute, 1954

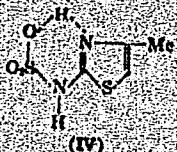
MAMYKINA, L.G.

Features of the clinical picture and course of adenovirus
pneumonia in children. Vop.okh.mat.i det. 7 no.4:10-13 Ap '62.
(MIRA 15:11)

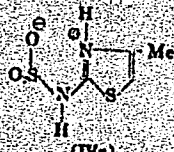
1. Iz kafedry pediatrii lechebnogo fakul'teta (zav. - dotsent A.P.
Trynkin) Saratovskogo meditsinskogo instituta.
(PNEUMONIA) (ADENOVIRUS INFECTIONS)

MAMVSKINA, T.S.

Structure of sulfonic acids of 2-amino-4-methylthiazole. I. Ya. Postorskiy and T. S. Mamyskina (S. M. Khov. Ural Polytech. Inst.), *Zh. Obshch. Khim.*, 23, 1765-70 (1953), *Chem. Abstr.*, 49, 4061a; 49, 1151a; Ochiai and Nagasawa, *C.A.*, 43, 7782; Hurd, *et al.*, *C.A.*, 45, 155c. ClSO_3H with 2-acetamido-4-methylthiazole (I) yields 2-acetamido-4-methyl-5-thiazolesulfonyl chloride (II). The structures proposed by Hurd and Ochiai (*loc. cit.*) are erroneous. The acid (III), m. 253-6°, formed by hydrolysis of II and on heating with H_2SO_4 changes to an acid, decomp. above 340°, an example of an unusual transition of the sulfonic acid into a sulfamic acid (IV or IVa). Addn. of ClSO_3H to I



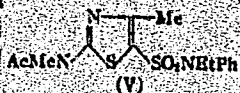
(IV)



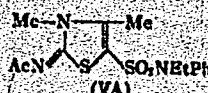
(IVa)

in CCl_4 gives some 40% pure III, m. 250° (decomp.). The following technique gives better results. I (17.6 g.) in 75 ml. CCl_4 was slowly added with cooling over 3 hrs. to 22 ml. ClSO_3H (temp. kept under 14°), and the mixt. poured on ice, yielding 70% III, decomp. 253-6° (from H_2O). I (20 g.) added to 30 ml. concd. H_2SO_4 , and the mixt. heated 6 hrs. at 180-85°, cooled to 60°, and poured into ice water gave 70% IV (or IVa), m. above 350° (from H_2O). III

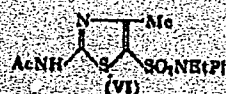
taken up in aq. NaOH , the soln. evapd., and the resulting Na salt (7.7 g.) treated with 17 ml. Ac_2O , refluxed 2 hrs., and cooled gave 8.8 g. Ac deriv., which, heated 1-1.5 hrs. with 15 g. PCl_5 on a steam bath, cooled, and treated with ice, gave II, m. 153-7° (from $\text{CCl}_4\text{:CHCl}_3$), identical with the specimen obtained from ClSO_3H and I directly. II also forms from ClSO_3H and the Na salt of I, but the yield is lower. I contains 1 active H (Zerevitin) mol. II (2.5 g.) added to 1.2 g. Et_3NHP in dry pyridine, kept 1 day, and dil. with H_2O gave 91% of the corresponding *N*-ethylamide, m. 188-9° (from dil. EtOH). This with Me_2SO in *N* NaOH gave 74% methylated product, probably (V) or (VA), m. 128-9°, which does not react



(V)



(VA)



(VI)

with MeMgI , indicating the absence of active H. Thus the ethylamide must have structure (VI). II in dry pyridine treated with cooling with gaseous Me_2NH gave 93% 2-acetamido-*N,N*-dimethyl-5-thiazolesulfonamide, m. 245-3° (from dil. EtOH), which has 1 active H, at the AcNH group.

G. M. Kozlovskii

MAMYKINA, V. A., Cand Geog Sci -- (diss) "The Morphology and Dynamics of the Shores of the Northeast Part of the Sea of Azov." Rostov-na-Donu, 1960, 20 pp, Rostov-na-Donu State Univ) 250 copies, no price given, (KL, 21-60, 119)

MAMYKINA, V.A.

Shore types in the northeastern part of the Sea of Azov and their
dynamic characteristics. Trudy Okean.kom. 8:33-44 '61.
(MIRA 14:5)

1. Rostovskiy gosudarstvennyy universitet.
(Azov, Sea of---Coasts)

PANOV, D.G., prof.; MAMYKINA, V.A., kand.geograf.nauk

Can we stop the destruction of the shores of the Sea of Azov?
Priroda 50 no.5:50-51 My '61. (MIPA 14:5)

1. Rostovskiy gosudarstvennyy universitet (for Panov). 2. Volgo-
Donskoye geologicheskoye upravleniye (Rostov) (for Mamykina).
(Azov, Sea of--Coast changes)

L 44523-66 SWT(1) GW

ACC NR: AP6020984 (N)

SOURCE CODE: UR/0213/66/006/003/0451/0457

AUTHOR: Mamykina, V. A.; Khrustalev, Yu. P.

ORG: none

TITLE: Processes of abrasion and deposition in recent sedimentation, using the Sea of Azov as an example

SOURCE: Okeanologiya, v. 6, no. 3, 1966, 451-457

TOPIC TAGS: physical oceanography, oceanic sedimentation, oceanic deposit, ~~bottom deposit~~, shoreline erosion, ~~bottom erosion~~

ABSTRACT: Two organizations, the Rostov-on-Don State University (1959-1963) and the Institute of Oceanography, AS USSR (1939-1961) have investigated core samples taken from the bottom sediments of the Sea of Azov. The thicknesses, grain-size, and composition of the most recent and contemporary deposits were analyzed specifically to determine rates and locations of erosion and deposition. Results obtained were compared with information obtained from bathymetric charts of the area, which incorporated information collected during the 1803-1956 period. Rates of recent epeirogenic movements were determined by geological and geomorphological methods and were checked against repeated leveling measurements. The area was divided into three characteristic regions:

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UDC: 551.351(262.56)

I. 44324-50

ACC NR: AP6020984

maximum deposition (Taganrog Bay), light deposition (belt around the shoreline subjected to wind erosion, in which the deposits reach depths of 6—10 m), and a zone subject to constant hydrodynamic erosional processes (circumshoreline zone, with deposits reaching depths of 6—7 m). Major erosion and deposition characteristics detected were: recent accumulation of sediments in the eastern and western portions of the basin (attributed to irregular movements along faults during the early development stages, subsequently exposed to hydrodynamic erosional forces, controlled by structural movements) and intense shoreline and bottom abrasion (caused by shallow-water erosion of upfaulted blocks which continued to supply coarse abrasive materials as scouring agents).
Orig. art. has: 3 figures and 2 tables. [ER]

SUB CODE: 08/ SUBM DATE: 24Nov65/ ORIG REF: 012/

Card 2/2 blg

ZHUNUSOV, T.Zh.; MAMYRIN, A.V.

Method of testing bent reinforced elements by repeated
increasing impact. Trudy Kazakh. fil. Asia no.2:76-83 '60.
(MIRA 15:2)

(Precast concrete—Testing)

MAMYRIN, B. A.
W. G.

*Mamyrin's Subordinant
Techniques*

549 514 51 412
The Effect of Spurious Resonances and Parallel Losses
on the Equivalent Parameters of Quartz Crystals. —B. A.
Mamyrin & I. N. Sosnovkin. (Zh. tekhn. Fiz., July 1948
Vol. 18, No. 7, pp. 935-938. In Russian.) A report of
an experimental investigation of quartz crystals manu-
factured in Russia, Germany and the U.S.A. Results
are tabulated.

Mamyrin, B.A.

✓ 3321. MEASUREMENT OF PLASMA PARAMETERS BY THE
PULSE METHOD IN HIGH-DENSITY DISCHARGE CURRENTS.
B.A. Mamyrin. 537.525
Zhuravskiy, P.V., Vol. 23, No. 11, 1915-19 (1963). In Russian.
English translation in: Atomic Energy Res. Establish. (Harwell)
Transl. No. 688 (1966).

Consideration is given to the limit of application of the pulse
method of probe measurement as the current density of the dis-
charge is increased and the duration of the voltage pulse supplied to
the probe reduced. As an example of measurements taken with dis-
charge currents of the order of a hundred amperes, the electron
density distribution over the transverse section of a discharge tube
is reproduced.

Mamyrin, B. A.

USSR

Mass spectrometer with an impulse ion source. N. I. Mamyrin and B. A. Mamyrin. *Zhur. Tekh. Fiz.* 23, 2101-3 (1988). A mass spectrometer is described which has an impulse ion source and which has a fair resolving power that can be improved. J. Kovtar Leach

PH
CD

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MT

MAMYRIN, B. A.

USSR.

A resonance magnetic mass spectrometer with a high resolving power. N. I. Ionov, B. A. Mamyrin, and V. B. Flks. *Zhur. Tekh. Fiz.* 23, 2104 (1953). A resonance magnetic mass spectrometer is described which has an increased current intensity and whose resolving power can be changed without discontinuity. J. Roytar Leach

62
2

USSR / Electronics

H

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9865

Author : Manyrin, B.A.

Inst : Leningrad Physico-Technical Institute, Academy of Sciences USSR, Leningrad

Title : High Vacuum Metal Seal, Permitting a Large Number of Closings.

Orig Pub : Pribery, i tekhn. eksperimenta, 1956, No 1, 97-98

Abstract : Description of a dismountable metallic vacuum seal, whose sealing tooth has a profile of a swalloe tail and enters into a rectangular groove with metal liner. This results in a minimum squeezing of the sealing metal through the lateral gaps and provides two sections on the surface of the tooth, under which the lining experiences deformation, thus insuring good hermeticity. Tests made on this construction in a vacuum valve, connecting the atmosphere

Card : 1/2

USSR /Electronics

H

Abs Jour : Ref Zhur - Fizika, No 4, 1967, No 3865

Abstract : with a volume pumped out by means of an oil diffusion pump with a trap, filled with liquid air, have shown that it is possible to produce in the volume a vacuum up to 10^{-7} mm mercury. In a volume of 0.5 liters separated from the atmosphere by the tested valve, a vacuum was maintained for days at approximately 10^{-5} mm mercury. The operation of the valve did not deteriorate after 300 closings and openings.

Card : 2/2

MAMYRIN, B. A.

621.317.3:621.374.3

865

Measurements of Extremely Small Periodic Pulsed Voltages and Currents

B. A. Mamyrin (Zh. tekhn. fiz., March 1938, Vol. 20, No. 3, pp. 652-658.)

A method is proposed in which a large number of original pulses are stored and transformed into a single pulse of longer duration. The pulses so obtained are amplified and observed on the screen of an oscillograph. Such a transformation of the frequency composition of the periodic signal sharply reduces the frequency band to be amplified and results in an increase by one or two orders of the output signal/noise ratio in comparison with direct amplification of the original pulses by a wide-band amplifier.

MAMYRIN, B.A.
AUTHORS: Kalinkevich, I.F. and Mamyrin, B.A.

120-3-21/40

TITLE: A Generator of Delayed Pulses with Automatic Change of the Delay Time (Generator zaderzhannykh impul'sov s avtomaticheskimi izmenyayemyim vremeni zaderzhki)

PERIODICAL: Pribery i Tekhnika Eksperimenta, 1957, Nr 3, pp.75-80 (USSR)

ABSTRACT: The generator gives two output voltage pulses. The first is a periodically repeating pulse of 0.1 μ sec. duration and 20 V amplitude; the repetition frequency is 20-40 kc/s (or any frequency below 60 kc/s when externally synchronized). The second pulse is the same as the first but is delayed on the first by a time which can be automatically changed, the change occurring over a period variable from 0.02 sec. to 5 min. After two examples of the application of such a generator, the block diagram (Fig.3) is described. Driving pulses are produced by the blocking oscillator 1, the output transformer of which has two output windings. From these windings 2 μ sec. duration pulses are passed to the input of the delay line 2 (first channel) and to the input of the phantatron 5 (second channel). The pulses are delayed in the delay line by 8 μ sec. and after shaping and

Card 1/3

100-7-1260
A Generator of Delay Time with Automatic Change of Delay
Time.

cription of delay line circuit (Fig. 5). V. A. Z. Gulin
author. There are 7 figures and
Russian text.

ASSOCIATION: Physico-Mathematical Institute, Academy of Sciences, USSR.
(Physico-Mathematical Institute AN SSSR)

SUBMITTED: May 18, 1961.

AVAILABLE: February 1962.

Doc 3/3 1. Pulse generators-Operation 2. Delay line-Circuits

MAMYRIN, P. A.

57-6-29/36

AUTHOR: MAMYRIN, B. A., SHULTROV, B. N.
 TITLE: Mass-Spectrometer with Resolving Power of the Order of Several
 Thousands. (Mass-spektrometriya s razreshayushchey siloy v
 neskol'ko tysyach, Russian)
 PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 6, pp 1347 - 1356
 (U.S.S.R.)

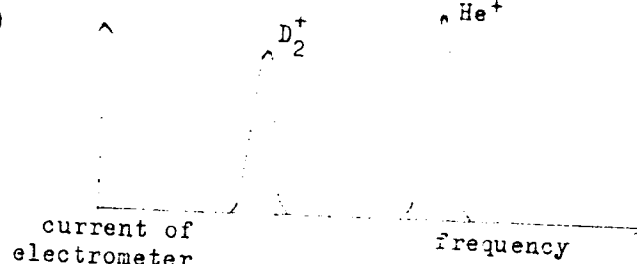
ABSTRACT: It is shown that a pulse-resonance-mass-spectrometer can be used
 as an analytical device for gas-analytical purposes with a re-
 solving power of several thousands. In order to realize this
 possibility the light intensity and sensitivity of the device
 were considerably increased 1) by the method of collecting ions
 in the source, 2) by the application of a specially developed
 generator of millimicroseconds-pulses with an increased sequence
 of frequencies, 3) by clarifying the basic causes of the oc-
 currence of a remaining current and elaboration of a measuring
 system for its removal. With respect to the production and ad-
 justment the device developed is more simple than those with
 double focussing and with a non-uniform field. One of the ad-
 vantages offered by the device is the possibility of regulating
 the resolving power without effecting any changes in the vacuum
 chamber. This is possible by selecting the suitable number of
 revolutions by the frequency transformation of generator pulses.

Card 1/2

Mass-Spectrometer with Resolving Power
of the Order of Several Thousands.

57-6-29/36

In the case of a reduction of the resolving power the light
intensity of the device is increased. An important property
of the device when used for purposes of analyses is the lack of
"tails" or "trains" on the basis of the curves of mass points.
(With 8 illustrations
and 6 Slavic references)



ASSOCIATION: LFTI of the Academy of Science of the U.S.S.R.
PRESENTED BY:
SUBMITTED: 3.3.1957
AVAILABLE: Library of Congress

Card 2/2

6(4)

AUTHOR:

Mamyrin, B. A.

SOV/108-13-11-5/15

TITLE:

The Production of Millimicrosecond Pulses With High Repetition Frequency (Generirovaniye millimikrosekundnykh impul'sov s vysokoy chastotoy sledovaniya)

PERIODICAL:

Radiotekhnika, 1958, Vol 13, Nr 11, pp 27-38 (USSR)

ABSTRACT:

A method for the production of millimicrosecond pulses with a repetition frequency of an order of magnitude of several megacycles is investigated for a voltage of several hundred volts. A method for the technical calculation of a generator of such pulses is elaborated. The operational data of the tubes of the output cascades are given. From the given table and from the data obtained by calculation it may be seen that relatively small tubes (e. g. 6J-29) may operate as output tubes of a generator of millimicrosecond pulses at a repetition frequency of the pulses of several megacycles. A pulse-voltage at a load capacity of several dozens of Picofarad may attain several hundred volts. - The description of the generator of millimicrosecond pulses with a repetition frequency of several megacycles

Card 1/2

The Production of Millimicrosecond Pulses With
High Repetition Frequency

SOV/108-13-11-5/15

will be given in a separate paper. The generator was developed in the LFTI AN SSSR. I. F. Kalinkevich took part in the investigation of tube operation. There are 10 figures, 1 table, and 16 references, 11 of which are Soviet.

SUBMITTED: February 13, 1958

Card 2/2

ANUFRIYEV, G.S.; ZAGULIN, V.A.; MAMYRIN, B.A.

Cathode current stabilizer. Prib.1 tekhn.eksp. 6 no.5:118-120
S-0 '61. (MIRA 14:10)

1. Fiziko-tekhnicheskiiy institut AN SSSR.
(Voltage regulators)

20073

SECRET/NOFORN/NOPI/NOSS/NOES
B7C/B7D

Amplification of periodic voltage

may have any form during this period). During each period of the signal the valve opens and with the input of the signal being continuously suited with respect to the beginning of the signal periods. The amplifier is connected behind the valve. The time constant of the amplifier input is chosen such that the envelope of the pulses reaching the amplifier input is separated. This envelope reproduces the form of the initial signal to a certain extent. The shape of these voltages at the various sections of the converter is shown in Fig. 1. The holding period at the output of the system (Fig. 1d) is by $T_H/T_S = f_{mS}/f_{mU}$ times longer than the period of the initial signal (their spectra are similar). T_S is the period of the initial signal; T_H is the period of the converted signal; f_{mU} is the maximum frequency of the spectrum of the converted signal; f_{mS} is the maximum frequency of the initial signal. Owing to the "compression" of the spectrum the converted signal can be amplified and observed by means of a low-frequency apparatus. In order to be able to evaluate the possibilities of such a method of amplifying periodic signals the gain obtained must be calculated with the signal-to-noise ratio. For this

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Amplification of periodic low-voltage

S 126/61/016/003/005/006

B 126/B205

purpose the theorem by V. A. Kotelnikov (Ref. 3) is used. When transmitting a signal with the maximum frequency f_{mS} of the spectrum it is sufficient, to transmit the values of this signal which differ from one another by the following period of time:

$$\Delta t \leq \frac{1}{2f_{mS}} ; \quad \Delta t_{\max} = \frac{1}{2f_{mS}} \quad (2)$$

Hence, it may be concluded that the shift of the opening pulses (strobe step) of the "valve" is found to be smaller than Δt_{\max} : $T_0 - T_S \leq \Delta t_{\max}$.

Formula $A = \sqrt{\Delta t_{\max U}} / T_0$ is obtained for the mentioned gain A. T_0 is the

pulse repetition period. It can be seen from this formula that an important gain can be obtained only when the energy of a large pulse number is accumulated; these pulses supply information about a certain section of the signal period during the maximum admissible averaging time at the output (Fig. 3). On the basis of this study it may be assumed that a minimum threshold of the stable amplification exists in the amplification of the converted low-frequency signals. Practically, this threshold lies at the

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20073

S/118/61/016/003/005/106
B116/B205

Amplification of periodic low-voltage

level of some hundred microvolts. The block diagram shown in Fig. 4 is recommended for the reduction of the threshold of the stable amplification of the complete device. To increase the signal level at the converter input it is expedient to pre-amplify the weak signal (before it reaches the converter) and the white noise by which it is accompanied by means of a wide-band amplifier. The low frequencies which are smaller than the maximum f_m must not pass through this amplifier. The method of amplifying a periodic signal offers the possibility of observing the practically undistorted shape of the signal. With a high pulse repetition frequency of the periodic signal this method also makes it possible to increase the signal-to-noise ratio considerably (by hundred to thousand times). On principle, such signals cannot be amplified by means of wide-band amplifiers. This method further offers the possibility of amplifying and observing the signal with a very wide frequency spectrum by means of a low-frequency apparatus. There are 4 figures and 5 Soviet-bloc references.

SUBMITTED: February 8, 1960

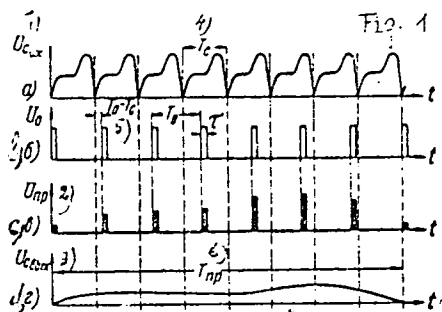
Card 4/6

20073

8/10/61 10:46/008 10:01/006
DMM 8803

Amplification of periodic low-voltage

Legend to Fig. 1: 1) voltage of signal at the converter input
2) $U_{\text{converter}}$ 3) voltage of the signal at the converter output
4) T_S period of the initial signal
5) $T_0 - T_S$ 6) $T_{\text{converter}}$
 T_0 is the duration of the opening pulse of the "valve"



Card 5/6

20073

0/108/61/016/003/005/006
B116/2005

Amplification of periodic low-voltage...

Legend to Fig. 3: 1) Δt_{\max}

2) U_s output 3) U_{noise} output

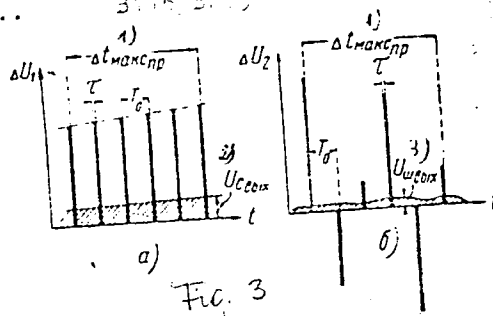


Fig. 3

Legend to Fig. 4: 1) signal source,
2) wide-band pre-amplifier, 3) "valve";
4) low-frequency amplifier with filter;
5) indicator of the output signal;
6) pulse generator; (these pulses start
the signal source and open the "valves").

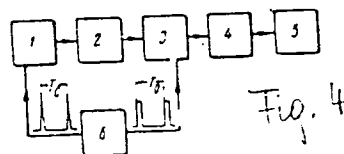


Fig. 4

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24859

9,2570

S/108/61/016/009/001/002
D202/D306

AUTHORS: Anufriyev, G.S., and Mamyurin, B.A.

TITLE: Experimental study of the white noise suppression
in stroboscopic amplification

PERIODICAL: Radiotekhnika v. 16, no. 9 1961 10 - 12

TEXT: In the present article the authors present the results of experimental work undertaken to confirm the theoretical assumptions of B.A. Mamyurin (Ref. 6: Radiotekhnika vol. 16 no.3 1961) that the stroboscopic method of amplification permits for a much better S/N ratio at the output as compared with that at the input of the system; that a signal be registered at a level which is much lower than the noise level of wide band amplifiers and that reception is possible of a very noisy wide band signal with a high S/N ratio adequate to determine all signal parameters. The mathematical expression for the increase in the signal to noise ratio A with stroboscopic detection as given in Ref. 6 (Op.cit.) is eq. (1).

J

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24859

S/108/61/016/009/001/002

Experimental study of the white...

D202/D306

$$A = \frac{\left| \frac{U_s}{U_n} \right|_{out}}{\left| \frac{U_s}{U_n} \right|_{in}} = \sqrt{\frac{F_s}{2 f_{max_{tr}}}} \quad (1)$$

In it $\left| \frac{U_s}{U_n} \right|_{in}$ - the ratio of the signal noise to voltage at the input; $\left| \frac{U_s}{U_n} \right|_{out}$ - the ratio of the signal to noise voltage at

output F_s - frequency at which the resulting signal is being sampled $f_{max_{tr}}$ - the maximum frequency of the spectrum of the transformed signal.

To simplify the calculations Eq (1) may be rewritten as eq. (2)

Card 2/8

24859

S/108/61/016/009/001/002
D202/D306

Experimental study of the white...

$$A = F_s \frac{T_{tr}}{2f_{max_{sp}}} \quad (2)$$

where T_r - period of registration of the transformed signal (time used for registering one period of the signal at the system output); $f_{max_{sp}}$ - maximum frequency of the resulting

signal spectrum. T_r should be long enough for the input signal during this time to remain practically constant. To check the above equations experimentally an arrangement permitting for large variations in A has to be used (of the order of 1000), hence the following parameters of the resulting signal were chosen $F_s = 150\text{kc/s}$ $f_{max_{sp}} = 5\text{ Mc/s}$. The other important

parameters were chosen from the following considerations. For accurate measurement of resulting levels of signal and noise,

Card 3/ 8

24859

Experimental study of the white...

S/108/61/016/OC9/001/002

D202/D306

both signal and noise at the input should be at considerable voltage levels. Since for $\left| \frac{U_s}{U_n} \right|_{out} \geq 10$ the registration of the

S/N at the output produces already considerable errors for large A, U_n is still more increased. The measuring arrangement has been, therefore, designed so as not to produce any noticeable distortion with the voltage during an input of 10V. The choice of duration τ_0 of the pulse, gating this circuit was determined by the requirement of undistorted signal shape at the output according to (Ref.6: Op.cit.) $\gamma_0 \leq \frac{1}{2f_{max}sp}$, the bloc diagram

of experimental circuitry for effective noise attenuation is given. The results of the experiment are shown by the oscillograms, for which the rise time of input pulse signals ≈ 0.2 microsecond, pass-band at the input $\approx 5Mc/s$ the evaluated increase in S/N ration $A \approx 270$; $T_{tr} \approx 32$ sec. The same arrangement was used for a series of measurements of quantity A $[A = \sqrt{T_{tr}}]$

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21859

S/108/61/016/009/001/002

Experimental study of the white... D202/D306

for a different T_{tr} and F_s and f_{mtr} . The experimental error did not exceed 10%. In detecting tr by the above method very small level signals difficulties arise due to low frequency fluctuations in the detecting and L.F. Circuits. To overcome it the absolute level of the signal at the input should be increased by a wide band amplifier (ШПЧ) (ШПЧ) inserted between the signal source and the converter. Thus connected, the wide band amplifier does not affect the noise of the system. If the signal source is a current generator with internal resistance R_i - ∞ then by applying an anti-interference circuit, the noise level may be reduced to that produced by the equivalent noise resistance of the valve R_{nv} of the first stage of amplification of a simple anti interference cct or to half the level of that noise in complex circuits (Ref. 9: V.L. Kreytsev, Videousiliteli (Video Amplifiers), Izd. "Sovetskoye radio" 1952); (Ref. 10: O.B. Lure, Usiliteli videochastoty (Video Frequency Amplifiers), Izd. "Sovetskoye radio" (1955)) with such an amplifier an additional improvement A' of the S/N ratio can be obtained.

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S/108/61/016/009/001/002
D202/D306

Experimental study of the white...

$$A' = \frac{U_{ntr}}{U_{nwb}} \approx 2 \sqrt{\frac{R_{ntr} + R_{in}}{R_{nv}}} \quad (3)$$

in which U_{ntr} the noise level of converter reduced to the input,
 U_{nwb} - same of the wide band amplifier. Juice multi-electrode
valves are used except for a triode in the first stage of wide
band amplifier $\frac{R_{ntr}}{R_{nv}} \approx 10$ and $A' \approx 6$.

If the signal is from a voltage generator ($R_i \rightarrow \infty$) the anti-
interference cannot be used and the improvement in A'' is approx-

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S/108/61/016/009/001/002

D202/D306

Experimental study of the white...

imately
$$A'' = \frac{U_{n_{br}}}{U_{n_{wb}}} \approx \sqrt{\frac{R_{n_{tr}} + R_{in}}{R_{n_v} + R_{in}}} \quad \text{and } A'' \approx 1 \div 3. \quad (4)$$

In the experiment a wide band commercially produced wide band amplifier type *Yu*-10 (USh - 10) was used, with an additional preamplifying stage. The wide band part of the arrangement had the following parameter: pass band $0.1 \div 5$ Mc/s the effective noise level at the input 20 microvolt, maximum gain 250,000. The block diagram of the whole arrangement is given. Finally the possibility of obtaining a very high S/N ratio (of the order of 100) at the output of system was investigated. It is stated in conclusion that the obtained improvement figures are by no means final and that the arrangement used did not require any additional adjustments during its operation and that the discussed method of detection could be recommended for designing compact instruments when solving many scientific and technical problems. There are 7 figures and 12 Soviet-bloc references.

Card 7/8

S/120/62/000/001/022/061
E140/E463

AUTHORS: Mamyrin, B.A., Anufriyev, G.S., Kalinkevich, I.F.

TITLE: High-repetition-rate millimicrosecond pulse generator

PERIODICAL: Pribery i tekhnika eksperimenta, no.1, 1962, 99-101

TEXT: A straightforward pulse generator based on amplification of sine waves, clipping and differentiation, using vacuum tube techniques, is described. The input frequency may be varied between 10 kcs and 2 Mcs, output pulse amplitude up to 200 V (output impedance not mentioned), pulse width 5 ns at half-amplitude points. There are 3 figures and 1 table.

ASSOCIATION: Fiziko-tekhnicheskii institut AN SSSR
(Physicotechnical Institute AS USSR)

SUBMITTED: June 2, 1961

Card 1/1

39162

5/120/62/000/003/028/048

E032/E114

(6/150 4923)
AUTHORS: Mamyrin, B.A., and Frantsuzov, A.A.

TITLE: A high-resolution resonance mass spectrometer

PERIODICAL: Priroda i tekhnika eksperimenta, no.3, 1962, 114-119

TEXT: A high-resolution spectrometer is described in which the ions are separated according to their time-of-flight in a uniform magnetic field. The device is similar in principle to that described by L.G. Smith and C.C. Damm (Rev.Scient.Instrum., 27, 1956, 633). In distinction to the latter device, in the present spectrometer the ion beam is swept from the centre to the periphery, so that the beam can be extracted and an ordinary electron multiplier can be used as a detector. A single-turn orbit is employed so that the effective magnetic field can be determined more accurately, and a grid modulator is used so that a more uniform field can be produced at small distances between the modulator electrodes. The device is illustrated schematically in Fig.1. The current at the output is recorded with the aid of an open-input electron multiplier, as shown in Fig.5. The instrument operates in the mass range $M/e = 10 - 40$.
Card 1/1

A high-resolution resonance mass ... S/120/62/000/003/028/048
E052/E114

The resolution is of the order of 25,000 to 35,000 at a
dispersion of 300 to 500 mm per 1% mass change.
There are 6 figures.

ASSOCIATION: Fiziko-tekhnicheskii institut AN SSSR
(Physicotechnical Institute AS USSR)

SUBMITTED: November 5, 1961

Card 2/5

41111

S/120/62/000/005/023/036

EO32/E314

5 114
AUTHORS: Mamyrin, B.A. and Mustrov, B.N.

TITLE: High-resolution mass-spectrometer with a two-stage time-of-flight separation of ions

PERIODICAL: Pribery i tekhnika eksperimenta, no. 5, 1962, 135 - 141

TEXT: This is a continuation of previous work reported by the authors in Ref. 7 (Zh. tekhn. fiz., 1957, 27, 6, 1347) and by the second of the present authors in Ref. 8 (Zh. tekhn. fiz., 1960, 30, 7, 860). The resonance mass-spectrometer described in the former paper suffers from various disadvantages, of which the main are 1) the presence of harmonics so that several peaks corresponding to a given mass may be obtained at different repetition frequencies applied to the modulator and 2) low output currents. The instrument reported in this paper was designed in order to minimise these disadvantages. The spectrometer is illustrated schematically in Fig. 1. The ion source ∇ has been described by the present authors in the first of the above two papers. It is a pulsed source in which the
Card 1/K3

S/120/62/000/005/023/036

High-resolution mass-spectrometer..EO32/E314

ion build-up occurs between extracting voltage pulses applied to the reflecting electrode 1 . Ion bunches are accelerated by the electrostatic field 2 and enter the metal dee Δ , which is maintained at a positive potential relative to the walls of the chamber. The ions receive an additional acceleration in the field 3 , so that they miss the source and enter the modulator M . The length of the ion bunches reaching the modulator is the same as at the source. The ions experience a trapezoidal voltage pulse in the modulator and are accelerated so that they leave the dee and enter the slit S_1 . Ions

leaving S_1 have an energy spread due to its finite size. This energy spread is balanced when the ions re-enter the modulator for the second time and are accelerated by the tail of the trapezoidal voltage pulse, the time of flight being chosen appropriately. Hence, in the final part of their orbit, they travel on circles of equal radius r_2 and finally enter the output slit S_2 . The total ion energy after the two

Card 2/A3

S/120/62/000/005/023/036

High-resolution mass spectrometer.. EO32/E314

accelerations in the modulator depends on the relation between the time of flight in the drift orbit and the repetition frequency of the oscillator. Controlled variation of this frequency within a small range gives rise to a small change in the total energy increase and, correspondingly, in the radius r_2 . In this way, the ion beam may be swept across the slit S_2 , giving an ion-current peak. The magnetic field is produced by a permanent magnet (600 - 2 900 Oe), in which the field is adjusted by suitable magnetic shunting. The resolution of the spectrometer R (50%) is better than 10 000. The spectrometer is designed for the range $m/e = 3 - 36$. Fig. 53 shows the resolution obtained for the $H^{135}Cl^{35} - Ar^{36}$ doublet. There are 7 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR
(Physicotechnical Institute, AS USSR)

SUBMITTED: October 30, 1961

Card 3/43

MAMYRIN, B.A.; ANUFRIYEV, G.S.; KALINKEVICH, I.F.

Generator of millimicrosecond pulses with a high following frequency. Prib.i tekhn.eksp. 7 no.1:99-101 Ja-F '62. (MIRA 15:3)

1. Fiziko-tekhnicheskii institut AN SSSR.
(Pulse techniques(Electronics))

38467
S/109/62/007/006/012/024
D271/3308

9.4340

AUTHORS: Namyrin, B. A. and Karatygin, V. A.

TITLE: Study of reverse conductance effect in junction diodes with a view to its application for new pulse circuits

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 6, 1962, 1014-1018

TEXT: The transition period is divided into two stages: in the first stage (τ_1) voltage on the diode is approximately the same as when current was flowing in the forward direction and the diode presents a short-circuit; in the second stage (τ_2) current is determined by the diffusion of minority carriers towards the junction and the diode must be treated as a generator of decreasing current; after $\tau_1 + \tau_2$ diode resistance becomes that determined by static characteristics. A fundamental equation describing the transition period is obtained assuming that maximum diffusion current depends only on the number and distribution of minority carriers and not
Card 1/2

Study of reverse ...

8/109/62/007/006/012/024
D2711/D505

on the voltage. When diode current changes linearly from forward to reverse direction, τ_2 is equal to half-lifetime of minority carriers. The circuit is shown for the experimental checking of the dependence of τ_1 on the ratio of forward/reverse current with both currents constant; results of measurements are shown in a graph. The junction diode can be used as a generator of very small time intervals (down to a few nanoseconds) by making use of the dependence of τ_1 on the above current ratio. The independence of current on diode voltage in the second stage permits generating in an external circuit pulses of desired shape, independently of τ_1 active in the circuit. A circuit for the generation of short pulses is shown which was tried in the kc/s - Mc/s range. There are 12 figures.

ASSOCIATION: Fiziko-tekhnicheskii Institut im. A. F. Joffe AN SSSR
(Physical and Technical Institute im. A. F. Joffe,
AS USSR)

SUBMITTED: July 12, 1961
Card 2/2

MAMYRIN, B.A.; FRANTSUZOV, A.A.

High-resolution resonance mass spectrometer. Prib. i tekhn. eksp.
7 no.3:114-119 My-Je '62. (MIRA 16:7)

1. Fiziko-tekhnicheskiy institut AN SSSR.
(Mass spectrometry)

L 15674-65 EWT(1)/EWT(m) ASD-3/DIAAP/ESD(gs)/ESD(t)/AEDC(b)/AS(mp)-2

ACCESSION NR: AP4047480

S/0120/64/000/005/0150/0157

AUTHOR: Anufriyev, G. S.; Mamy*rin, B. A.

TITLE: Time-of-flight mass spectrometer with a stroboscopic conversion of the output signal

SOURCE: Pribo* i tekhnika eksperimenta, no. 5, 1964, 150-157

TOPIC TAGS: mass spectrometer, time-of-flight spectrometer

ABSTRACT: A new spectrometer is described in which no magnet is used, a large-area ion source is applicable, and a panoramic spectrum can be obtained in a few microseconds. The spectrometer sensitivity and inertia can be adjusted in a wide range. The estimated sensitivity was 10^{-15} torr (partial pressure of nitrogen in the source) in recording a group of residual peaks near the mass number 28 during 100 sec; the measured sensitivity was 10^{-14} torr. Most experiments were conducted with these parameters of the spectrometer: repetition frequency of pushing pulses, 50 kc; energy of the drift-space incoming electrons, 1,000 ev; energy of ionizing electrons, 75 ev; duration of

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L 15674-65

ACCESSION NR: AP4047480

3

pulses propelling the ions from the ionization space into the drift space, 1 micro-sec; source window area, 3 cm²; time of flight in the drift space for an ion with a mass number 300, 20 microsec. The stroboscopic system of signal conversion is, in fact, a stroboscopic oscillograph capable of recording periodic signals with a repetition frequency of 20-100 kc and a spectral bandwidth of 30 Mc; minimum signal voltage, 5×10^{-8} v; recording time, 0.01 sec to 30 min. Block diagrams, a connection diagram of the converter, and a few sample oscillograms are presented. "The authors are deeply grateful to V. R. Regel for his constant attention and help in the work, and also to O. F. Pozdnyakov who performed the initial alignment of the spectrometer." Orig. art. has: 8 figures and 7 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR (Physico-Technical Institute, AN SSSR)

SUBMITTED: 26Apr64

ENGL: 00

SUB CODE: GP, EC

NO REF SOV: 011

OTHER: 005

Card 2/2

ACCESSION NR: AP4018378

S/0120/64/000/001/0121/0123

AUTHOR: Anufriyev, G. S.; Afonin, O. F.; Mamyrin, B. A.

TITLE: Suppression of noise accompanying the nuclear-magnetic-resonance signal of a magnetic-field meter

SOURCE: Priory i tekhnika eksperimenta, no. 1, 1964, 121-123

TOPIC TAGS: nuclear magnetic resonance, magnetic field meter, IMI-2 meter, noise suppression, stroboscopic noise suppression, magnetic field measurement

ABSTRACT: The use of a synchronous detector enhances the accuracy of the magnetic-field measurement but impairs the signal shape. To avoid the latter shortcoming, a stroboscopic method of noise suppression is advanced. The stroboscopic device (its functional and simplified electrical diagrams are supplied) ensures a 5-50 times higher signal-to-noise ratio and yields an output signal whose shape corresponds to the shape of the original signal but in a

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ACCESSION NR: AP4018378

different time scale. A provision is made for turning the stroboscopic device into a synchronous detector when warranted by experimental conditions. An IMI-2 magnetic-field meter and an ENO-1 oscilloscope are used. The maximum repetition frequency at the IMI-2 output is 270 kc. Orig. art. has: 3 figures and 1 formula.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR (Physico-Technical Institute, AN SSSR)

SUBMITTED: 22Mar63

DATE ACQ: 18Mar64

ENCL: 00

SUB CODE: NS

NO REF SOV: 002

OTHER: 000

Card 2/2

ZAGLIDIN, V. A.; MAMYRIN, P. A.

Current state of affairs in the field of laboratory equipment. (in Russian).
1. Tekhn. Eksp. 1986, No. 122, p. 122.

1. Fiziko-tekhnicheskyy institut AN SSSR.

I 18261-65 EWT(m) DIAAP/SSD/SSD(c)/AFWL/AS(mp)-2

ACCESSION NR: AP5000911

S/0020/64/159/004/0777/0778

AUTHOR: Mamyrin, B. A.; Frantsuzov, A. A.

TITLE: New measurement of the proton magnetic moment

SOURCE: AN SSSR. Doklady, v. 159, no. 4, 1964, 777-778

TOPIC TAGS: proton, magnetic moment, spin precession, hydrogen nucleus, ion cyclotron frequency, Faraday number

ABSTRACT: The cyclotron frequencies of the ions He^+ , Ne^{2+} , and Ne^+ were measured with a magnetic-resonance mass spectrometer described by the authors elsewhere (Pribury 1 tekhn. eksp., No. 3, 114, 1962). At the same time, the frequency of spin precession of hydrogen nuclei in a water sample were measured simultaneously in the same magnet, making it possible to determine the magnetic moment of the proton in nuclear magnetons. Unlike earlier methods, the present method makes it possible to measure the cyclotron period of the ions during a single revolution of the ions in the magnetic field, and deduce from this an exact theory of the motion of the ions in the instrument and to calculate the cyclotron frequency of the ions on the basis of experimental data without resorting to any supplementary

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L 18261-65

ACCESSION NR: AP5000911

assumptions. The results obtained by other investigators and in the present work are listed in Table 1 of the enclosure, which shows that the present method yields a much smaller experimental error. In addition, the authors calculated the Faraday number and found it to be $9,648.03 \pm 0.09$ Coulomb/mole in the Cl_2 mass scale (against $9,651.42 \pm 0.09$ in the old physical mass scale). This report was presented by Academician B. P. Konstantinov. Orig. art. has: 1 table

ASSOCIATION: Fiziko-tehnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute, Academy of Sciences SSSR).

SUBMITTED: 27May64

SUB CODE: NP

NR REF SOV: 001

ENCL: 01

OTHER: 005

Card 2/3

L 18261-65

ACCESSION NR: AP5000911

ENCLOSURE: 01

Source	Measurement method	Result
(3)	Oscatron	2.70268 ± 0.00006
(4)	Decelerating cyclotron	2.70268 ± 0.00005
(5)	Oscatron	2.70283 ± 0.00006
Present data	Magnetic resonance mass spectrometer	2.70279 ± 0.00002

Table 1. Proton magnetic moment expressed in nuclear magnetons

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L 40774-65 EWT(m)/T/EWA(m)-2
ACCESSION NR: AP5006487

S/0056/65/048/002/0416/0428

AUTHORS: Mamyrin, B. A.; Frantsuzov, A. A.

TITLE: Measurement of the magnetic moment of the protons in units
of the nuclear magneton

SOURCE: Zhurnal eksperimental'noy teoreticheskoy fiziki, v. 48,
no. 2, 1965, 416-428

TOPIC TAGS: proton, magnetic moment, mass spectrometer, magnetic
resonance

ABSTRACT: A new technique is proposed for measuring the magnetic mo-
ment of the proton, in nuclear magneton units, whereby the cyclotron
frequency is measured in a single revolution of the ions in the appa-
ratus. Earlier techniques did not possess this advantage. The pro-
cedure is based on the use of a magnetic resonance mass spectrometer,
described by the authors earlier (PTE, no. 3, 114, 1962), whose

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L 40774-65
ACCESSION NR: AP5006487

4
operating parameters were changed to accommodate lighter masses. The measurements were performed with He_4^+ , Ne_{20}^{++} and Ne_{20}^+ ions. The measuring technique, some units of the apparatus, and the various corrections introduced are described. The magnetic moment of the proton (without correction for the diamagnetic shielding of the hydrogen nuclei in water) is found to be 2.79279 ± 2 nuclear magnetons. The spread of the measurements is equivalent to $\pm 3.5 \times 10^{-6}$ rms relative error. The total rms relative experimental error is $\pm 6 \times 10^{-6}$. "The authors thank Professor N. N. Ionov in whose laboratory this work was done for support and discussions, and V. A. Zagulin, who participated in the design of the electronic apparatus, and B. N. Shustrov for many useful discussions." Orig. art. has: 6 figures and 15 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute, Academy of Sciences SSSR)

Card 2/3

STEN'KO, Mikhail Ivanovich; MAMYSH, A. I.; LISAKOVSKIY, I. N.

[The oldest in the South; outline history of the Taganrog
Ship Repair Plant] Stareishii na IUGE; ocherk istorii Tagan-
rogskogo sudoremontnogo zavoda. Rostov-na-Donu, Rostovskoe
knizhnoe izd-vo, 1961. 126 p. (MIRA 16:2)
(Taganrog--Ships--Maintenance and repair)

MAMYSHEV, G., inzhener-podpolkovnik

New branch of cybernetics. Tekh. i vooruzh. no. 1: 72-75
Ja '64. (MIRA 17:6)

MAMYSHEV, M.M., assistant

State of the thyroid gland in osteoarticular tuberculosis. Nauch.
trudy SamMI 23:82-84 '83 (MIRA 17:3)

1. Iz kliniki obshchey khirurgii Samarkandskogo meditsinskogo
instituta i iz Kostono'tuberkuleznoy bol'nitsy imeni Lenina,
Samarkand.

MAMYSHEV, T.I., inzh. (Tashkent); CHELNOKOVA, K.I., inzh. (Tashkent);
KARIMOV, T.Kh., irzh. (Tashkent)

Standard hoisting mechanisms for gates of hydraulic structures.
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